

Module: Database Development 271

Module name:	Database Development 271
Code:	DBD271
NQF level:	6
Type:	Core – Bachelor of Information Technology
Contact Time:	68 hours
Structured time:	10 hours
Self-directed time:	72 hours
Notional hours:	150 hours
Credits:	15
Prerequisites:	DBD171

Purpose

The student will learn to use the different tools and techniques available for the administration and maintenance of a relational database system. The course covers all aspects from the creation of a database to the full working implementation thereof.

Outcomes

Upon successful completion of this module, the student will be able to:

- Demonstrate detailed knowledge of the main areas of relational database model system, including and understanding of and the ability to apply the key terms, concepts, principles, rules, and theories thereof to unfamiliar but relevant contexts; and knowledge of distributed database systems with a focus on data replication.
- Evaluate, select and apply appropriate procedures or techniques in the processes of using data modification language structures and data definition language structures.
- Identify, analyse and solve problems in unfamiliar contexts, gathering evidence and applying solutions based on evidence and procedures appropriate to techniques to solve or pose queries required for creating and maintaining procedures using programmability concepts.
- Present and communicate complex information reliably and coherently using appropriate, professional conventions, formats, and technologies for the implementation of a selected database model.
- Evaluate performance of a database system against given criteria, and accurately identify and address the task-specific learning needs.
- Make decisions and act appropriately in familiar and new contexts, demonstrating an understanding of how the changes made to the logical and/or physical database model will affect other areas of a system.

Assessment

- Continuous evaluation of theoretical work through written assignments, formative, and a summative test.
- Continuous evaluation of practical work a project.
- Final assessment through a written examination.

Teaching and Learning

Learning materials

Prescribed Book

Database Architecture - IT without frontiers series

Additional Material

 Taylor, A.G. (2011). *SQL All-In-One for Dummies*. John Wiley & Sons Ltd.
[ISBN:9780470929964]

Learning activities

The teaching style is a mixture of the presentation of theoretical concepts, exercises, and discussions. It is a collaborative model with a practical approach, with four mandatory assignments and one project, which must be completed during the module.

Notional learning hours

Activity	Units	Contact Time	Structured Time	Self-Directed Time
Lecture		52.0		23.0
Formative feedback		13.0		
Project	1	3.0		6.0
Assignment	4			12.0
Test	4		8.0	16.0
Exam	1		2.0	15.0
		68.0	10.0	72.0

Syllabus

- Database Design
- Implementation of physical database design with SQL
- Data manipulation with SQL
- Data management
- DDL and DML Statements
- Stored Procedure, Triggers, Views and Cursors
- Security system of Database engine
- Concurrency Control
- Planning & Implementing Backup & Restore strategy with SQL
- Data Replication.